CPS-FC202

| DWG ISSUE | ECR OR CO ISSUED | DATE ISSUE | COMPL | APPD |
|---|---|---|---|---|
| 1 | | 6/24/74 | RSB<br>MCL | RVB<br>W/IG<br>JPG |

SHEET INDEX

| CONTENTS | SHEET NO. | SHEET ISSUE |
|---|---|---|
| SHEET INDEX<br>RECORD OF CHANGES<br>SUPPORTING INFORMATION<br>CURRENT DRAIN<br>USED-ON TABLE<br>NOTES<br>SYMBOL | 1 | 1 |
| CIRCUIT SCHEMATIC<br>COMPONENT LIST<br>CIRCUIT DESCRIPTION | 2 | 1 |
| CMS 160A | 3 | 1 |
| | 4 | 1 |
| | 5 | 1 |
| CMS 14SP | 6 | 1 |

SYMBOL

MAINTENANCE CHANNEL SWITCH SEQUENCER AND BIPOLAR INTERFACE (MSWS,BPI) ELEMENT A

| TERM. MOD. | FUNCT | TERM. | LOC |
|---|---|---|---|
| CP11 | I | 217 | 2A4 |
| CP21 | I | 208 | 2A5 |
| CP31 | I | 308 | 2A3 |
| ENASWD | I | 313 | 2A3 |
| IOLSWSQO | I | 215 | 2A3 |
| INCMD | I | 315 | 2A3 |
| LDMCMBO | I | 216 | 2A3 |
| MCHGWO | I | 214 | 2A3 |
| MCHICDLEO | I | 217 | 2A4 |
| MCHRDN | I | 107 | 2A4 |
| MCHROP | I | 007 | 2A4 |
| MCHSOO | I | 317 | 2A4 |
| SWRITO | I | 314 | 2A3 |
| MCHRDO | # | 307 | 2G3 |
| MCHRSTO | # | 318 | 2G3 |
| MCHSDN | # | 008 | 2G4 |
| MCHSDP | # | 108 | 2G4 |
| MCHSWFTO | # | 309 | 2G5 |
| MSGWO | # | 218 | 2G3 |
| SNDTWGO | # | 209 | 2G4 |
| SWSQ110 | # | 316 | 2G3 |
| +3 | P | 000,119 | 2G1 |
| GRD | G | 200,319, 260 | 2G2 |

SSP TRANSFORMERS AND INTERRUPT TRANSFORMERS (SSP,INTT) ELEMENT B

| TERM. MO. | FUNCT | TERM. | LOC |
|---|---|---|---|
| FBRCEN | I | 210 | 2A5 |
| FBRCEP | I | 310 | 2A5 |
| INTAN | I | 113 | 2A6 |
| INTAP | I | 013 | 2A6 |
| INTBN | I | 114 | 2A6 |
| INTBP | I | 014 | 2A6 |
| INTCN | I | 115 | 2A7 |
| INTCP | I | 015 | 2A6 |
| INTON | I | 116 | 2A7 |
| INTOP | I | 016 | 2A7 |
| INTEN | I | 117 | 2A7 |
| INTEP | I | 017 | 2A7 |
| INTFN | I | 118 | 2A8 |
| INTFP | I | 018 | 2A7 |
| INTGN | I | 101 | 2A8 |
| INTGP | I | 001 | 2A8 |
| INTHN | I | 102 | 2A8 |
| INTHP | I | 002 | 2A8 |
| INTJN | I | 103 | 2A8 |
| INTJP | I | 003 | 2A8 |
| INTKN | I | 301 | 2A9 |
| INTKP | I | 201 | 2A9 |
| MRFN | I | 102 | 2A9 |
| MRFP | I | 202 | 2A9 |
| FBR.LBFO | # | 211 | 2G5 |
| FBR.LBNO | # | 311 | 2G5 |
| MRFO | # | 213 | 2G9 |
| ST.ISAO | # | 012 | 2G6 |
| ST.ISBO | # | 112 | 2G6 |
| ST.ISCO | # | 010 | 2G7 |
| ST.ISDO | # | 312 | 2G7 |
| ST.ISEO | # | 109 | 2G7 |
| ST.ISFO | # | 009 | 2G7 |
| ST.ISGO | # | 111 | 2G8 |
| ST.ISHO | # | 011 | 2G8 |
| ST.ISJO | # | 110 | 2G8 |
| ST.ISKO | # | 212 | 2G9 |

RECORD OF CHANGES

| DWG ISS | PREV FURN | STD | NFR DIS" | SEE NOTE |
|---|---|---|---|---|
| | | | | |

NOTES:

1. ⏚ GROUND RETURN
2. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS
   CAPACITANCE VALUES ARE IN MICROFARADS
   VALUES PRECEDED BY THE SYMBOL +(PLUS) OR -(MINUS) ARE IN VOLTS
3. BATTERY AND GROUND TERMINALS FOR INTEGRATED CIRCUITS

| IC CODE | BAT. TERM. | GRD TERM. |
|---|---|---|
| 160A | 1,30, 31,33, 34,35, 38 | 8,10, 12,14, 16,19 |
| 14SP | 32 | 1 |

4. BATTERY AND GROUND TERMINALS FOR THIS CIRCUIT PACK ARE AS FOLLOWS:

| FUNCTION | TERMINAL |
|---|---|
| +3V | 000,119 |
| GRD | 200,319,260 |

5. HORIZONTAL MOUNTING CENTERS AT 0.3 INCH.

SUPPORTING INFORMATION

| CATEGORY | NO. |
|---|---|
| CONNECTOR ON FRAME | 947A OR 947C |
| SERIES FOR LATEST CLASS "A" CHANGE (ANY HIGHER SERIES IS ACCEPTABLE) | 2 |

CURRENT DRAIN: 600 MA

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE FIRST SHEET.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE FIRST SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

| SYSTEM USED ON | DESIGN CONTROL |
|---|---|
| COMMON SYSTEMS | IH |

ISSUE 1

1H98

FC202 CIRCUIT PACK

MAINTENANCE CHANNEL AND SSP INTERFACE CIRCUIT

AT&TCO STANDARD

BELL TELEPHONE LABORATORIES INCORPORATED

SHEET SIZE 6S

2

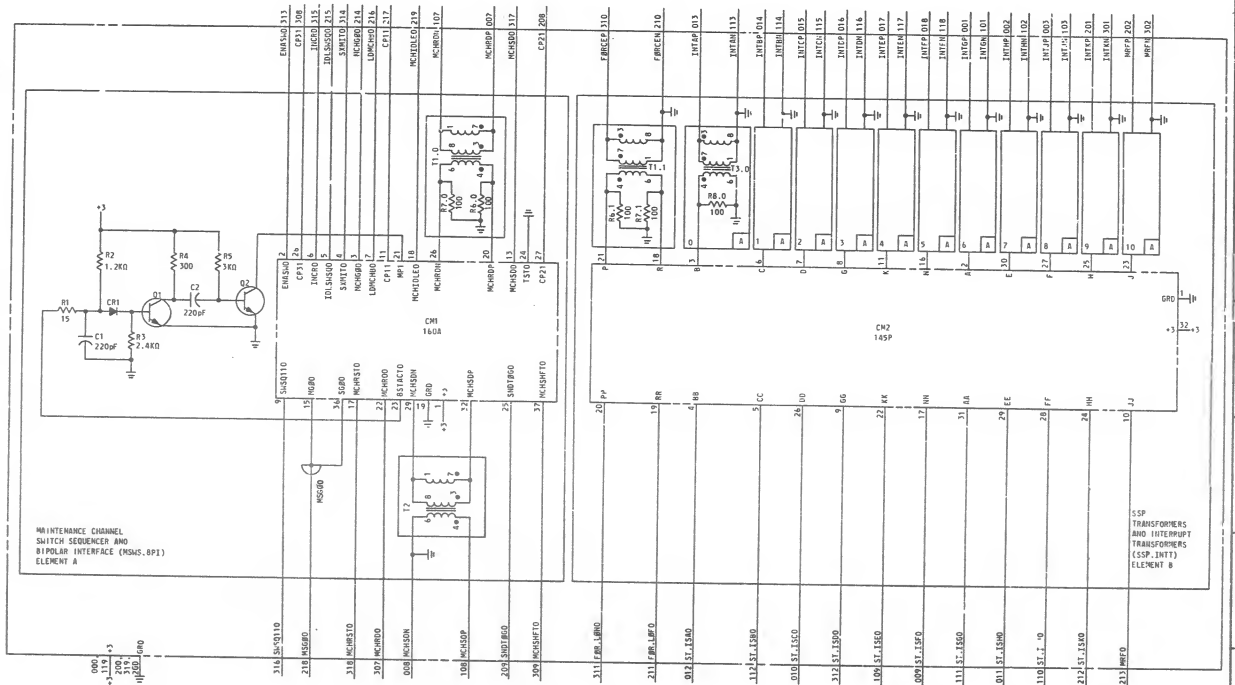
CPS-FC202
6 SHEETS

PRINTED IN U.S.A.

CPS-FC202

# PART OF CPS FC202

MAINTENANCE CHANNEL AND SSP INTERFACE CIRCUIT




COMPONENT LIST

CAPACITOR

| DESIG | CODE |
|---|---|
| [2] C1,C2 | RS-19774 L1,220pF |

DIODE

| DESIG | CODE |
|---|---|
| CR1 | 458C |

INTEGRATED CIRCUIT

| DESIG | CODE |
|---|---|
| CM1 | 160A |
| CM2 | 145P |

RESISTOR

| DESIG | CODE |
|---|---|
| R1 | RS-16645 L2,15 |
| R2 | ,1.2KΩ |
| R3 | ,2.4KΩ |
| R4 | ,300 |
| R5 | ,3KΩ |
| [2] R6.0,R6.1 | ,100 |
| [2] R7.0,R7.1 | ,100 |
| [11] R8.0-R8.10 | RS-16645 L2,100 |

TRANSFORMER

| DESIG | CODE |
|---|---|
| [2] T1.0,T1.1 | 2664G |
| T2 | 2664G |
| [11] T3.0-T3.10 | 2664G |

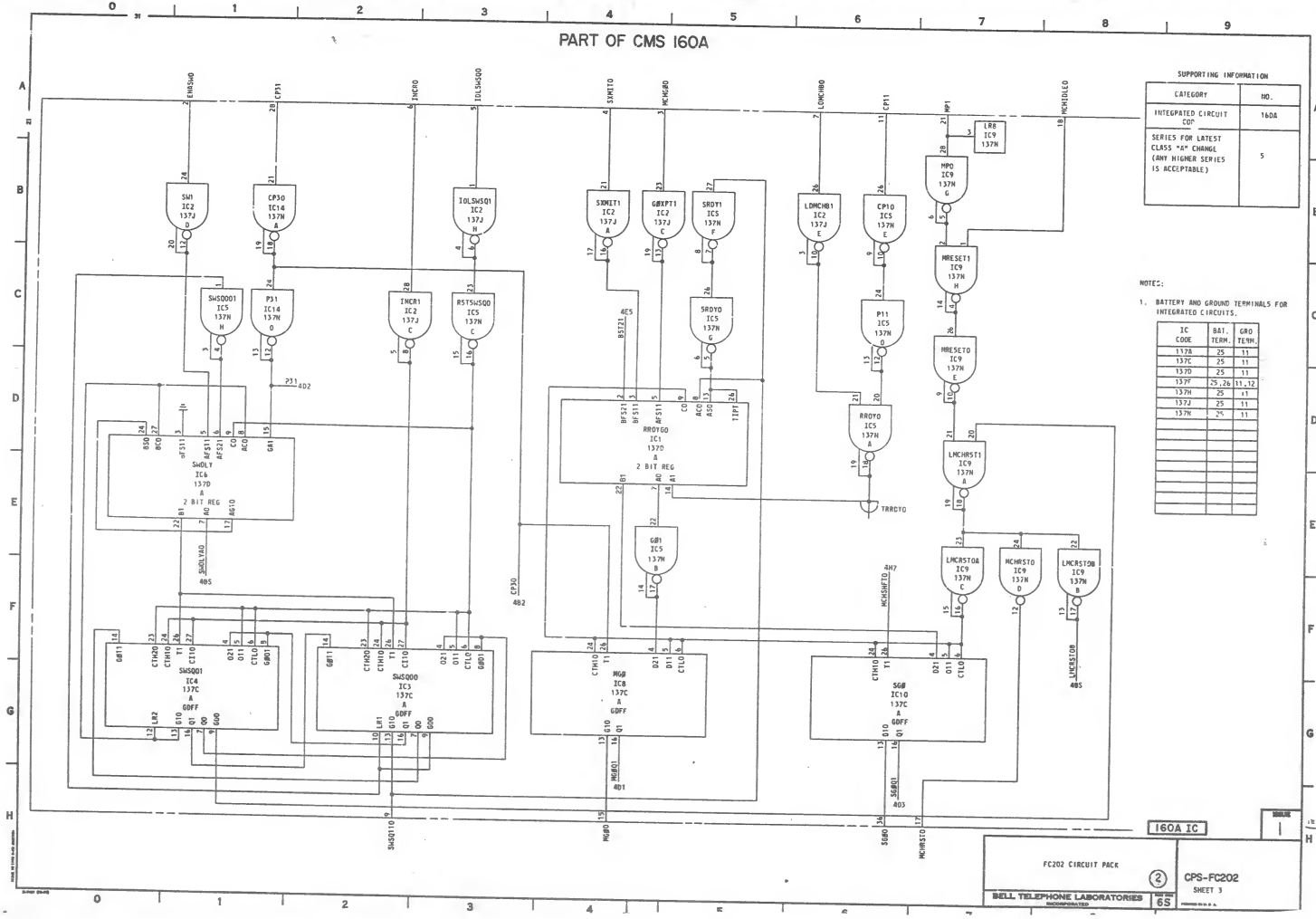
TRANSISTOR

| DESIG | CODE |
|---|---|
| [2] Q1,Q2 | 665 |

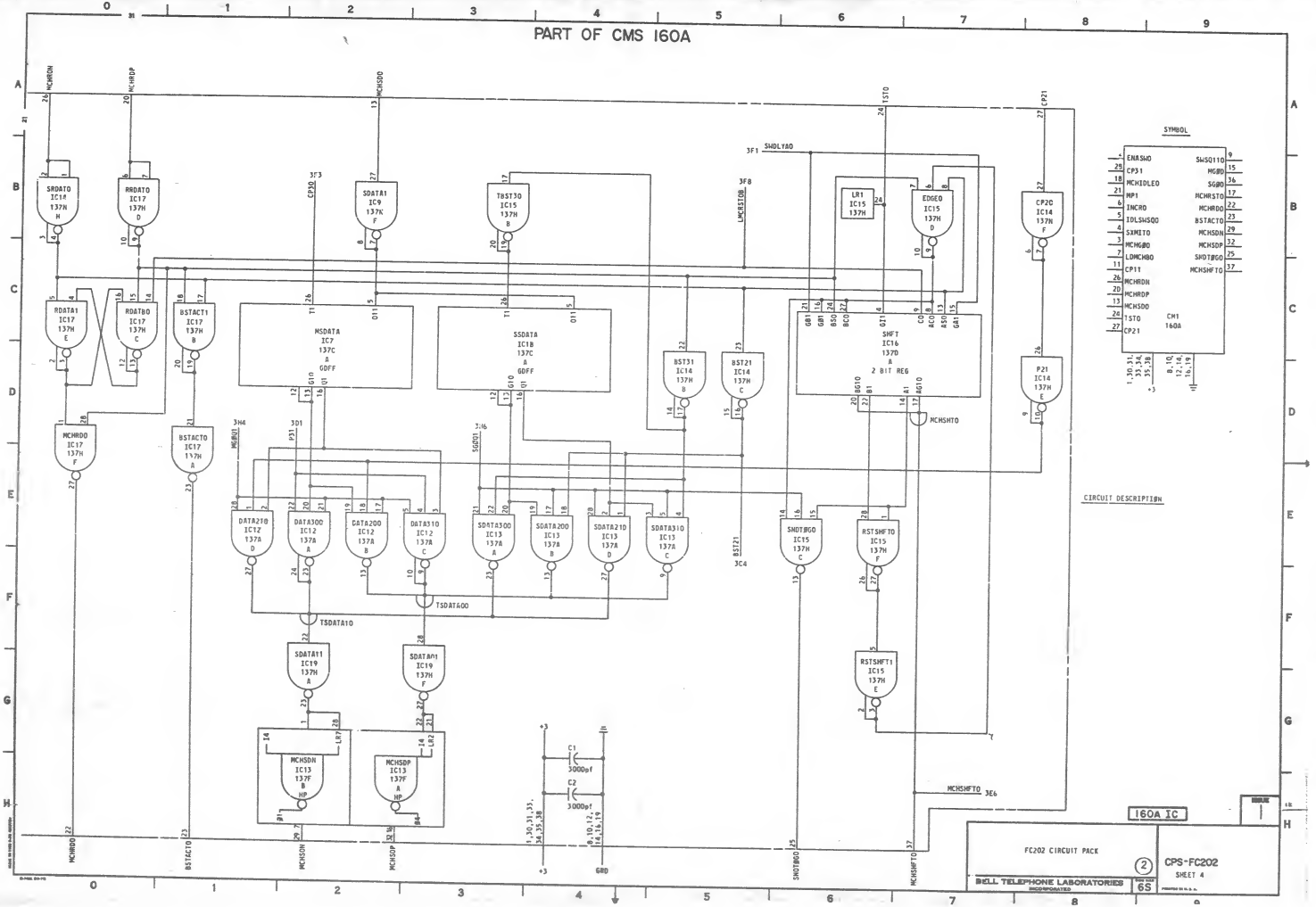
CIRCUIT DESCRIPTION

| | | |
|---|---|---|
| FC202 CIRCUIT PACK | 2 | CPS-FC202 SHEET 2 |
| BELL TELEPHONE LABORATORIES INCORPORATED | ISSUE 6S | |

CPS-FC202


PART OF CMS 160A
SUPPORTING INFORMATION
CATEGORY
NO.
INTEGRATED CIRCUIT CDC
160A
SERIES FOR LATEST CLASS "A" CHANGE (ANY HIGHER SERIES IS ACCEPTABLE)
5
NOTES:
1. BATTERY AND GROUND TERMINALS FOR INTEGRATED CIRCUITS.
IC CODE
BAT. TERM.
GRD TERM.
137B 25 11
137C 25 11
137D 25 11
137F 25,26 11,12
137H 25 11
137J 25 11
137K 25 11
SW1 IC2 137J G
CP30 IC14 137N A
IOLSWSQ1 IC2 137J H
SXMIT1 IC2 137J A
GBXPT1 IC2 137J C
SRDY1 IC5 137N F
LDMCHB1 IC2 137J C
CP10 IC5 137N E
LR8 IC9 137N
MP0 IC9 137N G
MRESET1 IC9 137N H
MRESET0 IC9 137N E
SWSDQ01 IC5 137N H
P31 IC14 137N D
INCR1 IC2 137J C
RSTSWSQ0 IC5 137N C
SRDY0 IC5 137N C
P11 IC5 137N D
RRDY0 IC5 137N A
LMCHRST1 IC9 137N A
SWDLY IC6 137D A 2 BIT REG
RRDYGO IC1 137D A 2 BIT REG
GB1 IC5 137N B
LMCRST0A IC9 137N C
MCHRST0 IC9 137N D
LMCRST0B IC9 137N B
SWSQ01 IC4 137C A GDFF
SWSQ00 IC3 137C A GDFF
MGB IC8 137C A GDFF
SGB IC10 137C A GDFF
160A IC
FC202 CIRCUIT PACK
BELL TELEPHONE LABORATORIES INCORPORATED
CPS-FC202
SHEET 3

CPS-FC202


PART OF CMS 160A
SYMBOL
CIRCUIT DESCRIPTION
160A IC
FC202 CIRCUIT PACK
BELL TELEPHONE LABORATORIES INCORPORATED
CPS-FC202
SHEET 4
MCHRON
MCHRDP
MCHSDO
TSTO
CP21
SHDLYAO
LMCRSTOB
MSDATA IC7 137C A GDFF
SSDATA IC1B 137C A GDFF
SHFT IC16 137D A 2 BIT REG
MCHSHTO
MCHSHFTO
TSDATA00
TSDATA10
MCHSDN
MCHSDP
SNDTBGO
MCHRDO
BSTACTO
GRD
CPS-FC202

# PART OF CMS 160A

COMPONENT LIST
INTEGRATED CIRCUIT

IC1 137D

| LOC CODE ELEM ID | DESIG | SH LOC |
|---|---|---|
| A | RRDYGO | 3D4 |
| B | | |
| C | | |
| D | | |
| E | | |
| F | | |
| G | | |
| H | | |

IC2 137J

| DESIG | SH LOC |
|---|---|
| SXMIT1 | 3A4 |
| GBXPT1 | 3B4 |
| SW1 | 3B1 |
| LDMCHB1 | 3B6 |
| INCR1 | 3C2 |
| IDLSWSQ1 | 3B3 |

IC3 137C

| DESIG | SH LOC |
|---|---|
| SWSQ00 | 3G2 |

IC4 137C

| DESIG | SH LOC |
|---|---|
| SWSQ01 | 3G1 |

IC5 137M

| DESIG | SH LOC |
|---|---|
| RRDYD | 3D6 |
| GB1 | 3E4 |
| RSTSWSQ0 | 3C3 |
| P11 | 3C6 |
| CP1D | 3B6 |
| SRDY1 | 3B5 |
| SRDYD | 3C5 |
| SWSQ001 | 3C1 |

IC6 137D

| DESIG | SH LOC |
|---|---|
| SWDLY | 3E1 |

IC7 137C

| DESIG | SH LOC |
|---|---|
| MSDATA | 4C2 |

IC8 137C

| DESIG | SH LOC |
|---|---|
| MGB | 3G4 |

IC9 137M

| DESIG | SH LOC |
|---|---|
| LMCHRST1 | 3D7 |
| LMCRSTOB | 3E8 |
| LMCRSTDA | 3E7 |
| MCHRSTD | 3E8 |
| MRESETD | 3C7 |
| SDATA1 | 4B2 |
| MPO | 3B7 |
| MRESET1 | 3B7 |

| LOC CODE ELEM ID |
|---|
| A |
| B |
| C |
| D |
| E |
| F |
| G |
| H |

| LOC CODE ELEM ID |
|---|
| A |
| B |
| C |
| D |
| E |
| F |
| G |
| H |

IC19 137H

| DESIG | SH LOC |
|---|---|
| SDATA11 | 4G2 |
| SDATA01 | 4G3 |

IC18 137C

| DESIG | SH LOC |
|---|---|
| SSDATA | 4C4 |

| LOC CODE ELEM ID |
|---|
| A |
| B |
| C |
| D |
| E |
| F |
| G |
| H |

IC10 137C

| DESIG | SH LOC |
|---|---|
| SGB | 3G6 |

IC11 137A

| DESIG | SH LOC |
|---|---|
| SDATA300 | 4E3 |
| SDATA200 | 4E4 |
| SDATA310 | 4E5 |
| SDATA210 | 4E4 |

IC12 137A

| DESIG | SH LOC |
|---|---|
| DATA300 | 4E2 |
| DATA200 | 4E2 |
| DATA310 | 4E3 |
| DATA210 | 4E1 |

IC13 137F (NOTE 1)

| DESIG | SH LOC |
|---|---|
| MCHSOPD | 4G3 |
| MCHSDND | 4G2 |

IC14 137N

| DESIG | SH LOC |
|---|---|
| CP30 | 3B1 |
| BST31 | 4D5 |
| BST21 | 4D5 |
| P31 | 3C1 |
| P21 | 4D8 |
| CP20 | 4B8 |
| SRDATD | 4B0 |

IC15 137M

| DESIG | SH LOC |
|---|---|
| TBST30 | 4B3 |
| SNDTBGO | 4E6 |
| EDGED | 4B7 |
| RSTSNFT1 | 4G6 |
| RSTSNFTO | 4E6 |

IC16 137D

| DESIG | SH LOC |
|---|---|
| SNFT | 4C7 |

IC17 137H

| DESIG | SH LOC |
|---|---|
| BSTACTO | 4B1 |
| BSTAC11 | 4C1 |
| RDATB0 | 4C0 |
| RMDATO | 4B0 |
| RDATA1 | 4C0 |
| MCHRDO | 4D0 |

| LOC CODE ELEM ID |
|---|
| A |
| B |
| C |
| D |
| E |
| F |
| G |
| H |

CAPACITORS

| DESIG. | CODE |
|---|---|
| C1,C2 | 801A, 3000pF |

NOTES:

1. CAPACITOR CHIP 801A, 3000pf, IS BONDED ON EACH SIDE OF 137F SIC.

160A IC

FC202 CIRCUIT PACK

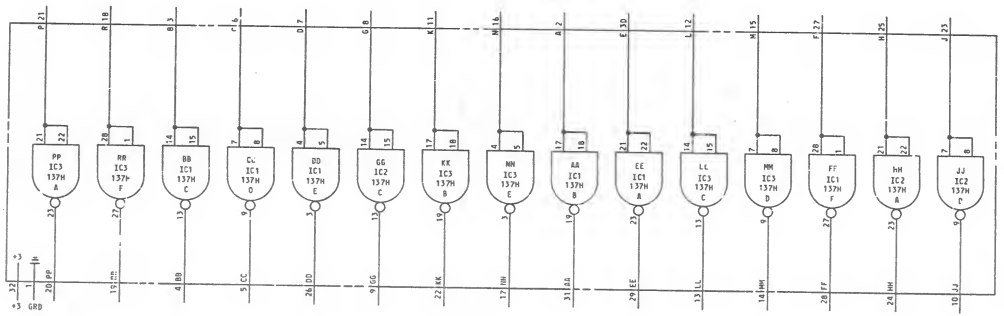
CPS-FC202
SHEET 5

BELL TELEPHONE LABORATORIES INCORPORATED

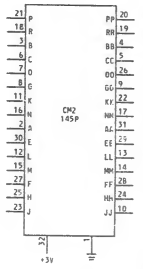
6S

CPS-FC202

CMS 145P




SYMBOL




NOTES:

1. BATTERY AND GROUND TERMINALS FOR INTEGRATED CIRCUITS.

| IC CODE | BAT. TERM. | GRD TERM. |
|---|---|---|
| 137H | 25 | 11 |
| | | |
| | | |
| | | |
| | | |

COMPONENT LIST

INTEGRATED CIRCUIT

| LOC CODE ELEM ID | IC1 137H DESIG | IC1 137H SH LOC | IC2 137H DESIG | IC2 137H SH LOC | IC3 137H DESIG | IC3 137H SH LOC |
|---|---|---|---|---|---|---|
| A | EE | 6C6 | HH | 6C8 | PP | 6C1 |
| B | AA | 6C5 | | | KK | 6C4 |
| C | BB | 6C2 | GG | 6C4 | LL | 6C6 |
| D | CC | 6C3 | JJ | 6C8 | MM | 6C7 |
| E | DD | 6C3 | | | NN | 6C5 |
| F | FF | 6C7 | | | RR | 6C2 |

CIRCUIT DESCRIPTION

SUPPORTING INFORMATION

| CATEGORY | NO. |
|---|---|
| INTEGRATED CIRCUIT | 145P |
| SERIES FOR LATEST CLASS "A" CHANGE (ANY HIGHER SERIES IS ACCEPTABLE) | |

145P IC

ISSUE 1

FC202 CIRCUIT PACK

2

CPS-FC202
SHEET 6

BELL TELEPHONE LABORATORIES INCORPORATED

6S

CPS-FC202